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CUSTOMER PERCEPTIONS AND PREFERENCES: A COMPARATIVE ANALYSIS OF CHATBOTS AND HUMAN SUPPORT IN E-COMMERCE CUSTOMER SERVICE

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Abstract:

The rapid growth of e-commerce has significantly changed the retail landscape, prompting businesses to prioritize customer service improvement. To achieve this, organizations are increasingly using technology, particularly artificial intelligence. One of the most prominent advancements in this sphere is the extensive adoption of chatbots alongside human support to assist customers. While both chatbots and human agents offer diverse advantages and face unique challenges, this study aims to explore customer preferences when seeking assistance in e-commerce. The study focuses on understanding how customers perceive the effectiveness of chatbots and human support in resolving their queries. It also intends to measure customer satisfaction levels based on their experiences with both chatbots and human agents and identifying key areas for improvement to enhance customer interactions and service quality. In order to analyse these aspects, both primary and secondary data were collected. A total of 155 responses were gathered through an e-survey using the Convenience Sampling technique. The findings highlight the necessity for businesses to strike a balance between automation and human intervention. While chatbots provide efficiency and instant responses, human support remains crucial for handling complex issues and personalized interactions. To enhance customer experience, businesses must focus on improving chatbot accuracy, reliability, and personalization while ensuring seamless collaboration between AI-driven solutions and human agents.

Keywords: *Chatbots, Human support, E-Commerce, Customer satisfaction*

Introduction:

The development of e-commerce has transformed the retail landscape completely. Businesses today give more importance to customer satisfaction and retention, recognizing their significant role in ensuring success (Kumar & Singh, 2023; Zarifis et al., 2024). As a result, organizations are placing more emphasis on enhancing customer service. To achieve this, they are increasingly using technology, particularly artificial intelligence. One prominent movement is the extensive adoption of chatbots by businesses. Chatbots are viewed as a cost-effective solution for providing customer support, offering the advantage of 24/7 availability and quick response times (Cheng et al., 2024; Perpetual AI, 2023).

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However, despite their benefits, chatbots fall short when it comes to empathy, personalized interactions, and the ability to resolve complex issues as effectively as human representatives (Softblues, 2023). On the other hand, relying solely on human support for customer service presents its own challenges, including higher costs and the potential for inconsistent or disengaged service (Hiver, 2021; Ced Commerce, 2022). This has fuelled an ongoing debate about the optimal approach—whether to rely on chatbots, human support, or a hybrid model. This dynamic has sparked significant interest in understanding customer preferences for chatbots versus human support, especially as businesses strive to balance operational efficiency with customer satisfaction (Sendbird, 2021). To explore this topic further, a study was conducted titled "Customer Perceptions and Preferences: A Comparative Analysis of Chatbots and Human Support in E-commerce Customer Service."

Significance of the Study:

This study holds significant value from multiple perspectives. It will assist e-commerce companies in making informed decisions regarding the integration of chatbots and human support. Additionally, the study's findings will highlight areas for improvement in AI-driven chatbot systems and human-assisted customer service. Furthermore, it will provide valuable insights for e-commerce businesses to better meet customer expectations. Ultimately, this research will make a meaningful contribution to the existing body of literature on customer service in the digital marketplace.

Review of Literature:

Zarifis et al. (2024) explored the psychological factors that affect consumer trust in AI chatbots within the e-commerce environment. The findings of the study revealed that Interactivity and humanness are vital in developing confidence in chatbots. Customers are more prepared to engage with chatbots that offer tailored, human-like communications.

Cheng et al. (2024) examined in what way consumers reply to text-based chatbots in e-commerce, mainly concentrating on task intricacy and chatbot disclosure. The findings of the study revealed that simple tasks are more effortlessly handled by chatbots, but intricate matters still necessitate human involvement.

Softblues (2023) compared AI chatbots and human agents in customer support. The author explored that Chatbots are cost-effective and provide prompt support but struggle with emotional intelligence and intricate problem-solving. Human agents are important for circumstances necessitating empathy and personalized consideration; however, they are costlier.

Perpetual AI (2023) assessed the efficacy and cost-effectiveness of AI chatbots compared to traditional customer service. The study recommends a balanced approach where chatbots manage simple and routine tasks, and human agents step in for more intricate problems.

Objectives of the Study:

1 To understand customer preferences between chatbots and human support when seeking assistance in e-commerce.
2 To examine how customers perceive the effectiveness of chatbots and human support in resolving their queries.

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3 To measure customer satisfaction levels based on their experiences with both chatbots and human support.

4 To identify key areas where chatbots and human support can enhance the customer experience.

Hypotheses of the Study:

Null Hypothesis (H_0) Customer satisfaction levels with chatbots and human support do not influence their preferences.

Alternative Hypothesis (H_1) Customer satisfaction levels with chatbots and human support significantly influence their preferences.

Research methodology:

Data Collection:

To analyze customer preferences and perceptions regarding chatbots and human support in e-commerce customer service, both primary and secondary data were collected. Secondary data were sourced from articles, blogs, and research papers, providing background insights. Primary data were gathered through a structured questionnaire distributed via Google Forms, employing an e-survey method for data collection.

Sample Design:

The study adopted a Convenience Sampling technique. The questionnaire was shared with respondents across various locations in Mumbai through online social media platforms. To ensure an adequate number of responses, the survey remained open for 15 days, ultimately collecting 155 completed responses.

Statistical Techniques for Data Analysis:

For data processing and analysis, Microsoft Office Excel 2013 and the Statistical Package for Social Sciences (SPSS) were utilized. The study applied statistical techniques such as frequency analysis, percentage calculations, and the Chi-square test to interpret the collected data. The results were systematically presented using tables for clarity and better understanding.

Result and Discussion:

1) Age Group Distribution

Table 1 Age Group Distribution

Age Group Distribution	Frequency	Percent
18–25	141	91.0
Below 18	10	6.5
26–40	3	1.9
Above 60	1	.6
Total	155	100.0

The findings in the table 1 reveals the age group distribution of 155 respondents. The majority of the respondents (91%) fall within the age range 18-25 years. 6.5% of respondents were below 18 years of age. Only 1.9% of respondents belong to the age group 26-40 years, making it a very small minority among the respondents.0.6% respondents were from the age group above 60 years, which represents the smallest proportion of respondents. The findings indicated that the that the majority of respondents were young individuals.

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2) Online Shopping Habits

Table 2 Online Shopping Habits

Online Shopping Habits	Frequency	Percent
Occasionally	75	48.4
Rarely	53	34.2
Frequently	27	17.4
Total	155	100.0

The findings in the table 2 represent the online shopping habits of respondents. Nearly half of the population (48.4%) shop online occasionally. A significant number of respondents (34.2%) shop online rarely. A smaller part of respondents (17.4 %) is regular online shopper. These findings indicates that online shopping is moderately popular and it is not the main mode of shopping for most of the respondents.

3) Interaction of Respondents with Chatbots while Shopping Online

Table 3 Interaction of Respondents with Chatbots while Shopping Online

Interaction of Respondents with Chatbots while Shopping Online	Frequency	Percent
No	98	63.2
Yes	57	36.8
Total	155	100.0

The findings in the table 3 represents the interaction of respondents with chatbots while shopping online. Majority of the respondents have not used chatbots during their online shopping. Only 36.8% of respondents have interacted with a chatbot while online shopping. These findings indicates that use of chatbot in online shopping is still growing but has not reached universal adoption among respondents.

4) Experiences of Respondents with Chatbots

Table 4 Experiences of Respondents with Chatbots

Experiences of Respondents with Chatbots	Frequency	Percent
Neutral	63	40.6
Not interacted therefore cannot comment	51	32.9
Satisfactory	34	21.9
Very Satisfactory	3	1.9
Very Unsatisfactory	2	1.3
Unsatisfactory	2	1.3
Total	155	100.0

The finding in the table 4 represents how respondents rate their experiences with chatbots. 63% of respondents rated their experience with chatbots as neutral. It indicates majority of respondents neither found their experience with chatbots good nor bad. It also shows that chatbots meet basic expectations for many users. 32.9% of respondents have not interacted with chatbots. It indicates that there is still scope for increasing chatbot engagement and adoption. 21.9% of respondents found experience with chatbots satisfactory. 3% of respondents rated their experience as very satisfactory. Only 2.6% (unsatisfactory + very unsatisfactory) gave negative feedback, indicating that the performance issues of chatbots is comparatively occasional.

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5) Perceptions of Chatbot Solution Accuracy

Table 5 Perceptions of Chatbot Solution Accuracy

Perceptions of Chatbot Solution Accuracy	Frequency	Percent
Sometimes	50	32.3
Not interacted therefore cannot comment	45	29.0
Often	34	21.9
Rarely	12	7.7
Always	11	7.1
Never	3	1.9
Total	155	100.0

The findings in the table 5 represents respondents' perceptions of whether chatbots provide accurate and helpful solutions. 32.3% of respondents think chatbots are sometimes accurate and helpful. 29.0% of respondents have not interacted with chatbots, so they could not provide a response. 21.9% of respondents feel chatbots often provide helpful solutions. 7.7% of respondents believe that chatbots rarely provide accurate and helpful solutions. A smaller group feels chatbots always (7.1%) deliver reliable solutions, showing some exceptional cases. (1.9%) believe chatbots never provide accurate and helpful solutions. The data reflects that while chatbots are perceived as helpful by many respondents, their accuracy and reliability remain inconsistent, with significant scope for improvement.

6) Suggested Improvements for Chatbot Interactions

Table 6 Suggested Improvements for Chatbot Interactions

Suggested Improvements for Chatbot Interactions	Frequency	Percent
Better understanding of queries	53	34.2
Not interacted therefore cannot comment	49	31.6
More personalized responses	20	12.9
Faster response time	19	12.3
Ability to handle complex issues	12	7.7
Others	2	1.3
Total	155	100.0

The findings in the table 6 represents respondents' preferences for improvements in chatbot interactions. 34.2% of respondents wish chatbots to have a better understanding of queries. 31.6% of respondents have not interacted with chatbots and thus could not suggest improvements. 12.9% of respondents would like chatbots to provide more personalized responses. 12.3% of respondents want faster response times as an improvement. 7.7% of respondents want chatbots to have a greater ability to handle complex issues. 1.3% of respondents provided suggestions not listed in the options. These findings underscore the necessity for improvements in chatbot AI to augment comprehension, speed, personalization, and problem-solving abilities.

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7) Interaction Frequency and Experience with Human Support

Table 7 Interaction Frequency and Experience with Human Support

Interaction Frequency and Experience with Human Support	Frequency	Percent
Yes	105	67.7
No	50	32.3
Total	155	100.0

The data in the table 7 represents respondents' experiences with interacting with human support for customer service in e-commerce, indicating that human interaction remains a significant portion of customer support. The findings revealed that a majority of respondents (67.7%) have interacted with human support for customer service in e-commerce. Nearly one third of respondents (32.3%) have not interacted with human support in this context, suggesting some reliance on other methods of assistance such as chatbots, self-service or have not faced issues requiring human intervention.

8) Experience with Human Support

Table 8 Experience with Human Support

Experience with Human Support	Frequency	Percent
Satisfactory	67	43.2
Neutral	42	27.1
Not interacted therefore cannot comment	30	19.4
Very Satisfactory	12	7.7
Unsatisfactory	3	1.9
Very Unsatisfactory	1	0.6
Total	**155**	**100.0**

The findings in table 8 revealed that A majority of respondents (53.6%) had a positive experience, with 43.2% rating it satisfactory and 7.7% rating it very satisfactory. 27.1% of respondents gave a neutral rating, reflecting average experiences. Negative experiences were rare, with only 2.5% of respondents rating their experience as unsatisfactory or very unsatisfactory. The findings suggest that human support is generally perceived positively in e-commerce, with a high level of satisfaction and minimal dissatisfaction among users. This highlights the importance of maintaining high-quality human support to meet customer needs effectively.

9)Comparison of Personalization Between Human and Chatbot Support

Table 9 Comparison of Personalization Between Human and Chatbot Support

Comparison of Personalization Between Human and Chatbot Support	Frequency	Percent
Agree	60	38.7
Neutral	37	23.9
Not interacted therefore cannot comment	30	19.4
Strongly Agree	22	14.2
Disagree	5	3.2
Strongly Disagree	1	.6
Total	155	100.0

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The data in the table 9 represents respondents' perceptions of whether human support offers a more personalized approach than chatbots. 38.7% of respondents agree that human support offers a more personalized approach. 23.9% of respondents are neutral, neither agreeing nor disagreeing. 19.4% of respondents have not interacted with human support and could not provide a valid opinion. 14.2% of respondents strongly agree that human support is more personalized. 3.2% of respondents disagree that human support is more personalized. 0.6% strongly disagrees with this statement, indicating an isolated case of strong disagreement. This data indicates that humans are better at understanding and addressing individual needs compared to chatbots.

10)Service Preference for Issue Resolution

Table 10 Service Preference for Issue Resolution

Service Preference for Issue Resolution	Frequency	Percent
Human Support	76	49.0
Chatbots	27	17.4
Can't say	26	16.8
No Preference	26	16.8
Total	155	100.0

The findings in the table 10 highlight respondents' preferences for resolving issues between chatbots and human support. The majority (49.0%) prefer human support, showing a clear preference for personalized, empathetic, and potentially more effective problem-solving approaches. 17.4% of respondents prefer chatbots, this group is significantly smaller, however it reflects that chatbots are not as much of favoured for issue resolution compared to human support. A collective 33.6% of respondents (16.8% each - no preference + can't say) indicate neutrality or uncertainty, suggesting that a significant portion of respondents are open to either method.

11)Important Factors in Choosing Support Services

Table 11 Important Factors in Choosing Support Services

Important Factors in Choosing Support Services	Frequency	Percent
Accuracy of solution	58	37.4
Personalization	30	19.4
Can't say	26	16.8
Availability (24/7 support)	25	16.1
Speed of response	14	9.0
Others	2	1.3
Total	155	100.0

The data in the table 11 represents the most important factors respondents consider when choosing between chatbots and human support. Majority of respondents think accuracy of the solution to be the most important factor. 19.4% of respondents give more importance to personalization. 16.8% of respondents selected can't say, suggesting that a portion of respondents are unsure or have no strong preference regarding the deciding factor. According to 16.1% of respondents availability is the key factor. 9.0% of respondents value speed of response. 2 respondents (1.3%) provided other reasons not captured in the listed options. The findings indicate the need for both chatbots and human support systems to focus on delivering accurate, reliable solutions while incorporating personalized interactions.

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12) Reliability of Chatbots Vs. Human Support for Complex Issues

Table 12 Reliability of Chatbots Vs. Human Support for Complex Issues

Reliability of chatbots vs. human support for complex issues	Frequency	Percent
Human Support	81	52.3
Can't say	45	29.0
Chatbots	29	18.7
Total	155	100.0

The finding in the table 12 represents respondents' opinions on which service—chatbots or human support—is more reliable for handling complex issues. A notable portion of (29%) respondents were found to be unsure or could not provide their opinion. 52.3% of respondents were of the opinion that human support is more reliable for complex issues.

13) Result of Hypothesis Testing

Null Hypothesis (H_0): Customer satisfaction levels with chatbots and human support do not influence their preferences.

Alternative Hypothesis (H_1): Customer satisfaction levels with chatbots and human support significantly influence their preferences.

13.1) Chatbot Experience vs. Service Preference

Table 13.1 Chatbot Experience vs. Service Preference

Crosstab				
Count				
		Which service do you prefer for resolving your issues?		
		Can't say	Chatbots	Human Support
How would you rate your experience with chatbots?	Neutral	9	13	29
	Not interacted therefore can not comment	13	3	24
	Satisfactory	4	11	16
	Unsatisfactory	0	0	2
	Very Satisfactory	0	0	3
	Very Unsatisfactory	0	0	2
Total		26	27	76

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	21.309[a]	15	.127
Likelihood Ratio	24.418	15	.058
N of Valid Cases	155		

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The p-value (0.127) is greater than 0.05, which means the relationship between chatbot satisfaction levels and service preference is not statistically significant. This suggests that customers' satisfaction with chatbots does not have a strong enough influence on their preference for chatbots versus human support. Customers may still prefer human support despite satisfactory chatbot experiences.

13.2) Human Support Experience vs. Service Preference

Table 13.2 Human Support Experience vs. Service Preference

Crosstab				
Count				
		Which service do you prefer for resolving your issues?		
		Can't say	Chatbots	Human Support
How would you rate your experience with human support?	Neutral	5	13	14
	Not interacted therefore can not comment	10	3	11
	Satisfactory	9	9	40
	Unsatisfactory	0	0	3
	Very Satisfactory	1	2	8
	Very Unsatisfactory	1	0	0
Total		26	27	76

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	28.257[a]	15	.020
Likelihood Ratio	26.701	15	.031
N of Valid Cases	155		

The p-value (0.020) is less than 0.05, meaning the relationship between satisfaction with human support and service preference is statistically significant. This indicates that customers' satisfaction with human support does influence their preference, with higher satisfaction leading to a preference for human support over chatbots. Customers satisfied with human support overwhelmingly prefer it over chatbots. This shows the strength of personalized human interaction in shaping customer preferences.

Limitations of the Study:

1. This study focused only on respondents residing in Mumbai, which may limit the generalizability of the findings to other regions.
2. The sample size was restricted to 155 respondents, which may not fully represent the broader population.
3. The research considered only selected variables, potentially leaving out other factors that could influence customer preferences.
4. The findings are based on data collected within a specific timeframe, meaning they may not reflect future changes in consumer attitudes, preferences, or behaviors.

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Recommendations and Conclusion:

E-commerce companies should adopt a hybrid model of chatbots and human support. Chatbots can handle simple issues, while complex issues can be managed by human agents. Companies should work on enhancing the ability of chatbots to handle complex issues, better comprehend customer queries, and offer personalized engagement and responses. The findings of the study revealed that some respondents had never interacted with a chatbot. Therefore, e-commerce companies should encourage and educate people to use chatbots. Businesses should focus on improving the customer experience with both human agents and chatbots by regularly collecting customer feedback and refining the performance of both chatbots and human agents.

Future Scope of the Study:

As e-commerce and online shopping continue to grow, similar studies can be conducted in other cities such as Nashik, Nagpur, Pune, and Aurangabad to gain a broader understanding of customer preferences. Additionally, the research can be expanded to a state-level or national-level study on a larger scale, providing more comprehensive insights into chatbot and human support preferences across diverse demographics.

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